

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## COMPREHENSIVE VALIDATION PACKAGE

## ATL Applications INVENTORY SHEET

## WORK ORDER # 0909122C

	Page	Nos.
	From	То
1. Work Order Cover Page & Laboratory Narrative & Tab	le 1	3
2. Sample Results and Raw Data (Organized By Sample)	4	7
a. ATL Sample Results Form		
b. Target Compound Raw Data		
-Internal Standard Area and Retention Time Sumn	nary (If Applicable)	
-Surrogate Recovery Summary (If Applicable)	, , ,	
-Chromatogram(s) and Ion Profiles (If Applicable)	)	
3. QC Results and Raw Data		
a. Method Blank (Results + Raw Data)	-	-
b. Surrogate Recovery Summary Form (If Applicable)	•	-
c. Internal Standard Summary Form (If Applicable)	•	-
d. Duplicate Results Summary Sheet	1	-
e. Matrix Spike/Matrix Spike Duplicate (Results + Raw	Data) -	-
f. Initial Calibration Data (Summary Sheet + Raw Data)		
g. MDL Study (If Applicable)	-	-
h. Continuing Calibration Verification Data		
i. Second Source LCS (Summary + Raw Data)	•	
j. Extraction Logs	-	
k. Instrument Run Logs/Software Verification	8	10
1. GC/MS Tune (Results + Raw Data)	-	•
Shipping/Receiving Documents:		
a. Login Receipt Summary Sheet	11	12
b. Chain-of-Custody Records	13	13
c. Sample Log-In Sheet	14	15
d. Misc. Shipping/Receiving Records (list individual rec	cords)	
Sample Receipt Discrepancy Report		-
5. Other Records (describe or list)		
a. Manual Spectral Defense		
b. Manual Intergrations	-	-
c. Manual Calculations	-	-
d. Canister Dilution Factors	-	-
e. Laboratory Corrective Action Request	-	-
f. CAS Number Reference	16	17
g. <u>Variance Table</u>		-
h. Canister Certification		-
<ol> <li>Data Review Check Sheet</li> </ol>	18	18
Completed by:		
Kara McKiernan/I		09/21/09
(Signature) (Print Nat	me & Title)	(Date)



## WORK ORDER #: 0909122C

## Work Order Summary

CLIENT:

Mr. Taeko Minegishi

BILL TO:

Accounts Payable

Environmental Health & Engineering,

Accounts Payable

Inc.

Environmental Health & Engineering, Inc.

117 Fourth Avenue

117 Fourth Avenue Needham, MA 02494

Needham, MA 02494

PHONE:

800-825-5343

P.O. #

16512

FAX:

781-247-4305

PROJECT #

16512

DATE RECEIVED: DATE COMPLETED: 09/04/2009 09/18/2009

CONTACT:

Ausha Scott

FRACTION#	NAME	TEST
33A	102117	<b>ATL Applications</b>
33AA	102117 Lab Duplicate	ATL Applications
34A	102118	ATL Applications
35A	102119	<b>ATL Applications</b>
36A	102120	ATL Applications
37A	102147	ATL Applications
38A	102148	<b>ATL Applications</b>
39A	102149	<b>ATL Applications</b>
39AA	102149 Lab Duplicate	<b>ATL Applications</b>
40A	102150	<b>ATL Applications</b>
41A	102151	ATL Applications
42A	102152	<b>ATL Applications</b>
43A	102153	<b>ATL Applications</b>
44A	103137	<b>ATL Applications</b>
45A	103138	ATL Applications
46A	103139	<b>ATL Applications</b>
47A	103140	<b>ATL Applications</b>

Continued on next page



### **WORK ORDER #:** 0909122C

## Work Order Summary

CLIENT:

Mr. Taeko Minegishi

BILL TO:

Accounts Payable

Environmental Health & Engineering,

Environmental Health & Engineering, Inc.

CCV

117 Fourth Avenue

117 Fourth Avenue Needham, MA 02494

Needham, MA 02494

PHONE:

800-825-5343

P.O. #

16512

FAX:

48A

49A 50A

50B

50C

51A

781-247-4305

PROJECT # 16512

**ATL Applications** 

DATE RECEIVED:

09/04/2009

CONTACT: Ausha Scott

DATE COMPLETED:

09/18/2009

FRACTION# NAME TEST 103141 **ATL Applications** 103142 **ATL Applications** Method Blank **ATL Applications** Method Blank **ATL Applications ATL Applications** Method Blank

CERTIFIED BY:

Linda d. Fruman

Laboratory Director

DATE:

09/18/09



## LABORATORY NARRATIVE Ozone by Radiello 172 Environmental Health & Engineering, Inc. Workorder# 0909122C

Seventeen Radiello 172 (Ozone) samples were received on September 04, 2009. The procedure involves reaction of 4-pyridylaldehyde with 3-methyl-2-benzothiazolinone hydrazone to yield the corresponding azide. The absorbance is then measured at 430 nm using a spectrophotometer. Results are reported in uG and uG/m3.

Sampling rate of 24.6 mL/min was provided by the manufacturer.

## **Receiving Notes**

There were no receiving discrepancies.

## **Analytical Notes**

Results were calculated based on 25 deg C without temperature correction. The actual exposure time was used to calculate sample concentrations and reporting limits.

An exposure time of 20160 minutes was used for the QC samples.

All media used for the sampling were supplied by the client. Blank subtraction was not performed on the sample results since the media used for Method Blanks may be from a different lot than the media used for the samples.

## **Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicate as follows:

- B Compound present in laboratory blank greater than reporting limit.
- J Estimated value.
- E Exceeds instrument calibration range.
- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the detection limit.
- M Reported value may be biased due to apparent matrix interferences.
- N The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

## Sample Results and Raw Data

# ATL Application # 62 for RAD 172 (Ozone) Spectrophotometer AIR TOXICS LTD.

%Rec	Γ						
	1.3 ND	0.64	1.00	9/4/2009	W	09091Z2C-50C	Method Blank
N	1.3 ND	0.64	1.00	9/4/2009	A	0909122C-50B	Method Blank
O NO	1.3 ND	0.64	1.00	9/4/2009	A	09091Z2C-50A	Method Blank
D ND	1.3 ND	0.64	1.00	9/4/2009	8	0909122C-49A	103142
8	1.3 ND	0.64	1.00	9/4/2009	9/3/2009	09091ZZC-48A	103141
N	1.3 ND	0.64	1.00	9/4/2009	9/3/2009	0909122C-47A	103140
1 23	13 11	0.64	1.00	9/4/2009	9/3/2009	09091ZZC-46A	103139
D ND	1.3 ND	0.64	1.00	9/4/2009	9/3/2009	0909122C-45A	103138
D	1.3 ND	0.64	1.00	9/4/2009	9/3/2009	0909122C-44A	103137
O NO	1.3 ND	0.64	1.00	9/4/2009	W	0909122C-43A	102153
NO	1.3 ND	0.64	1.00	9/4/2009	M	0909122C-42A	102152
D ND	1.3 ND	0.64	1.00	9/4/2009	9/3/2009	0909122C-41A	102151
D ND	1.3 ND	0.64	1.00	9/4/2009	9/3/2009	0909122C-40A	102150
0 21	1.3 10	0.64	1.00	9//4/2009	9/3/2009	0909122C-39AA	102149 Duplicate
0 21	1.3 10	0.64	1.00	9//4/2009	9/3/2009	0909122C-39A	102149
ND	1.3 ND	0.6	1.00	9//4/2009	9/3/2009	0909122C-38A	102148
D ND	1.3 ND	0.64	1.00	9//4/2009	9/3/2009	0909122C-37A	102147
D ND	1.3 ND	0.64	1.00	9//4/2009	A	0909122C-36A	102120
NO	1.3 ND	0.64	1.00	9/4/2009	9/3/2009	0909122C-35A	102119
D ND	1.3 ND	0.64	1.00	9//4/2009	9/3/2009	0909122C-34A	102118
2 24	13 12	0.64	1.00	9/4/2009	9/3/2009	0909122C-33AA	102117 Duplicate
1		0.64	1.00	9/4/2009	9/3/2009	09091ZZC-33A	102117
(ug) (ug/m3)	(ug/m3) (ug)	(pg)	Factor	Date	Date	Compresso.	Outsipic sac.

COMMENTS: 1. NA=Not Applicable
2. ND=Not Detected
3. Exposure time of 20160 minutes was assumed for the QC samples.
4. Background subtraction not performed.

		6.384		20160					
		CCV Spike Amt	_	QC Duration					
0.638	12.988	6.441419669	1.00	20160	0.759	>	V NA	COV	51A
0.638	-0.010	-0.004881949	1.00	20160	0.024	Þ	Method Blank NA	Me	50C
0.638	0.026	0.012659008	1.00	20160	0.026	>	Method Blank NA	Me	508
0.638	0.061	0.030199964	1.00	20160	0.028	Þ	Method Blank NA	Me	50A
0.638	#DIV/0i	-0.215373431	1.00						
0.638	#DIV/O!	-0.215373431	1.00	1					
0.638	#DIV/O!	-0.215373431	1.00						
0.638	0.308	0.152986662	1.00	20160	0.042	¥	103142		49A
0.638	0.397	0.196839054	1.00	20160	0.047	9/3/2009	103141		48A
0.638	0.362	0.179298097	1.00	20160	0.045	9/3/2009	103140		47A
0.638	23.139	11.47567427	1.00	20160	1.333	9/3/2009	103139		46A
0.638	0.415	0.205609532	1.00	20160	0.048	9/3/2009	103138		45A
0.638	0.415	0.205609532	1.00	20160	0.048	9/3/2009	103137		44A
0.638	0.308	0.152986662	1.00	20160	0.042	ş	102153		43A
0.638	0.167	0.082822835	1.00	20160	0.034	*	102152		42A
0.638	0.450	0.223150489	1.00	20160	0.050	9/3/2009	102151		41A
0.638	0.415	0.205609532	1.00	20160	0.048	9/3/2009	102150		40A
0.638	21.247	10.53723308	1.00	20160	1.226	9/3/2009	102149 Duplicate		39AA
0.638	21.194	10.51092164	1.00	20160	1.223	9/3/2009	102149		39A
0.638	0.344	0.170527619	100	20160	0.044	9/3/2009	102148		38A
0.638	0.432	0.214380011	1.00	20160	0.049	9/3/2009	102147		37A
0.638	0.149	0.074052356	1.00	20160	0.033	\$	102120		36A
0.638	0.503	0.249461924	1.00	20160	0.053	9/3/2009	102119		35A
0.638	0.397	0.196839054	1.00	20160	0.047	9/3/2009	102118		34A
0.638	24.554	12.17731254	1.00	20160	1.413	9/3/2009	102117 Duplicate		33AA
0.638	24.519	12.15977158	1.00	20160	1.411	9/3/2009	102117		33A
RL(ug)	Conc (ug/m3)	Ozone Conc (ug)	무	Duration (min)	Abs	Date of Collection	Client	LabSampleID	
					Ozone taking into account Temp	zone taking int	24.6 0	Corrected Q	
							9/4/2009	Date of Analysis:	
	Q x Duration	Slope			one	5 Typically 5 for Ozone	5 Tj	Volume (mL)	
Low PointxDF	Conc (ug) x 1000000	(Abs-Y-int)xDF				25 Typically 25	25 T <sub>1</sub>	Sampling T (deg C)	
					Ozone	24.6 Typically 24.6 for Ozone		Sampling Rate (mL/min))	
							9122C	Workorder #: 09091220	
							ksheet	Ozone Radiello Calculation Worksheet	Ozone

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## Date of Calibration 9/4/2009 Linear Regression

1.287	1.287	1287	1287	#DIV/0i	#DIV/0!	#DIV/0!	1287	1287	1287	1287	1287	1.287	1.287	1.287	1287	1287	1287	1287	1287	1287	1287	1.287	1.287	1287	1287	(AB))	RI (119/m3)		
6.441419669	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.47567427	ND	ND	ND	ND		ND	10.53723308	10.51092164	ND	ND	ND	ND		12.17731254	12.15977158		Recult (110)		
12.98840913	B	ND	5	#DIV/0!	#DIV/0!	#DIV/0!	ND	ND	B	23.13942579	ND	ND	ND	ND	ND	ND	21.2471631	21.194109	ND	ND	ND	ND	5	24.55420163	24.51883223		Recult (me/m2)		
101	%Rec																					5.				%Rec			
1																		hand entry		114	57	22.8	11.4	5.7	0	ug/mL ug Ozone	4-PA	ug/ml*0.224*0.5mL	4-PA
																				12.768	6.384	2.5536	1.2768	0.6384	0			24*0.5mL	
																				1.473	0.768	0.317	0.166	0.092	0	absorbance			
																							R2	Y-int	Slope				
																							0.999738139	0.024556634	0.114018866				

## QC Results and Raw Data

## Spectrophotometer Logbook

@Air Toxics Ltd.

Log Book #: \_\_1873

430 nm

Work Order: 09091220 Method:

Wavelength: \_

Date:

Prep. Notes:

0.768

1.473

Analyst:

Standard ID	Concentration	ABS
<b>パ58 - 30 - 5.7</b>	5:7 00 ML	0.092
1 -11.4		0.166
.22.9	22.8	D 217

114

r = 0.9997m = 0.1140 b = 0.02455

Fraction	Dilution	ABS	Sample ID	Sample Volume
33∆	1.00	1.411	102117	5.0 mL
33AA		1.413		
34A		0.047	118	
355A		0.053	119	
36A		0.033	120	
37Д	1	0.049	147	
39A		0.044	148	
394		1.223	149	
39AA		1,226	149	
HOA		0.048	150	
41A		0.050	151	
424		0.054	152	
43A		0.042	V 153	
441		0.048	103137	
45A		0.048	1 138	
HGA		1.335	139	
47A		0.045	140	
484		0.047	141	
49A		0.042	9 147	
BIL		0.028	NA	
BIK		0.026		
BIK		0.024		
CCV/LCS		0.759	<del></del>	

Page 2

Signed:

Date: 4/10/09

Spectrophotometer Standard Treparation Log	WAIT TOXICS LIU. LOG BOOK #: 1858
Standard ID: 1858-30  Project: Rad 177. Calibration Solution  Analyst: A Tolomo  Preparation Date: CALUDO  Expiration Date: Q1409	Solvent: DI H.O. Solvent Lot #: NA
Procedure/Comments: Dissolve 20 ml of 4-19  (1476-1103, Located FZZH 5: 200 ml  prepare dilutions at 1:2, 1:5, 1:10 and	Pyridine - carboxaldehade 97%  DI H2O From this solution  1:20. Stock solution = 114 "9/ml
1:2) ESON Pyridiae solution with 250	and of DI HED = 57" 1/mL
1:5) 100 ml of Pyridine solution with 4	100 ml of DT HEO = 22.8 49/mc
1:10) 100ml of Pyridine solution with 9	100ml of DI 420 = 11.41 ug/mL
1:20) 250 ml of Pyridine 1:10 solution with Cthen remove 250 ml of 1:10 solution	th 250 ml DT 40 = 5.7 00/mc ion to yield final volume of 500,1
final volume of 5 ml, stir and let	on to each level to field a stand for I hour Grover with me at 430 nm.
ing of 4-pyridylaldehade	e = 0. ZZ4ng of OZONE
\$	
and the state of t	gard All Williams and Estate State S
9/4/09	7
A	
	THE STREET HOME PRINTED AND AND AND AND AND AND AND AND AND AN
Page 30 Signed Date	Reviewed Date Rev. 8/97

## **Shipping/ Receiving Documents**



## 180 Blue Ravine Road, Suite B Folsom, CA 95630

## Phone (916) 985-1000 FAX (916) 985-1020 Hours 8:00 A.M. to 6:00 P.M. Pacific

COMPANY:	Environmental Health & Engineering, Inc.	
ATTENTION:	Mr. Taeko Minegishi	
FAX #:	781-247-4305	
FROM:	Sample Receiving	
Workorder #:	0909122C	
# of pages (Including Cover):	4	
0/04/0000		

9/21/2009

Thank you for selecting Air Toxics Ltd. We have received your samples and have found no discrepancies. In order to expedite analysis and reporting, please review the attached information for accuracy. Corrections can be faxed to **Ausha Scott at 916-985-1020.** 

ATL will proceed with the analysis as specified on the Chain of Custody and Sample Login page.

Environmental

36A

67A

38A

40A

Lab Data

## CHAIN OF CUSTODY FORM

Health & Engineering, inc. FROM: Environmental Health and Engineering, Inc. 117 Fourth Avenue Needham, MA 02494-2725 Please send invoices to ATTN: Accounts Payable Please send reports to ATTN: Data Coordinator In all correspondence regarding this matter, please refer to EH&E Project # 16512 For EH & E Data Coordinator - URGENT DATA & SAMPLE ID **SAMPLE TYPE** ANALYTICAL METHOD/NUMBER OTHER:Time/Date/Vol. 8/20/09 9309 DEONE ANALYSIS 102117 AIR PASSIVE 102118 35A 102119 6 102120 9309 8/20/09 102147 102 148 39A 102149 102150 411 102151 424 102152 43A 102153 8/20/09 109 44A 103137 45A 103138 103139 103140 103141 49Aspecial Instructions: Standard turn around time ☐ Rush by date/time ☐ Fax results 781-247-4305 Electronic transfer - datacoord ☐ RETURN SAMPLES

Each signatory please return, one copy of this form to the above address of Environmental Health, & Engineering, Inc. Relinquished by: Received by: \_\_\_\_\_\_\_of (company name) \_\_\_\_\_\_ Relinquished by: \_\_\_\_\_\_of (company name) \_\_\_\_\_ Date: Received by: \_\_\_\_\_\_of (company name) \_\_\_\_\_\_Date: \_\_\_\_\_ Relinquished by: \_\_\_\_\_\_of (company name) \_\_\_\_\_\_Date: \_\_\_\_\_ Received by: \_\_\_\_\_\_of (company name) \_\_\_\_\_ Date: \_\_\_\_\_

Received by: \_\_\_\_\_\_\_\_of Environmental Health & Engineering, Inc.



## SAMPLE RECEIPT SUMMARY

## WORKORDER 0909122C

Client Date Promised: 09/16/09 11:59 pm
Phone Pate Completed: 0/18/09

Mr. Taeko Minegishi
Environmental Health & Boo-825-5343
Engineering, Inc.

Phone
Date Completed: 9/18/09
Date Received: 9/4/09
Date Received: 9/4/09

117 Fourth Avenue 781-247-4305 Project#: 16512 Needham, MA 02494

Sales Rep: TL Total \$: \$ 935.00 Logged By: MG

<b>Fraction</b>	Sample #	<u>Analysis</u>	Collected	Amount\$
33A	102117	ATL Applications	9/3/2009	\$50.00
33AA	102117 Lab Duplicate	ATL Applications	9/3/2009	\$0.00
34A	102118	ATL Applications	9/3/2009	\$50.00
35A	102119	ATL Applications	9/3/2009	\$50.00
36A	102120	ATL Applications	NA	\$50.00
37A	102147	ATL Applications	9/3/2009	\$50.00
38A	102148	ATL Applications	9/3/2009	\$50.00
39A	102149	ATL Applications	9/3/2009	\$50.00
39AA	102149 Lab Duplicate	ATL Applications	9/3/2009	\$0.00
40A	102150	ATL Applications	9/3/2009	\$50.00
41A	102151	ATL Applications	9/3/2009	\$50.00
42A	102152	ATL Applications	NA	\$50.00
43A	102153	ATL Applications	NA	\$50.00
44A	103137	ATL Applications	9/3/2009	\$50.00
45A	103138	ATL Applications	9/3/2009	\$50.00
46A	103139	ATL Applications	9/3/2009	\$50.00
47A	103140	ATL Applications	9/3/2009	\$50.00
48A	103141	ATL Applications	9/3/2009	\$50.00
49A	103142	ATL Applications	NA	\$50.00
50A	Method Blank	ATL Applications	NA	\$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.

Atlas Project Name/Profile#: CPSC Indoor Air Monitoring/13297

BILL TO: Accounts Payable

Environmental Health & Engineering, Inc.

117 Fourth Avenue Needham, MA 02494

Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #62 Ozone-Radiello 172



## SAMPLE RECEIPT SUMMARY Continued

Client

Phone

Fax

Date Promised: 09/16/09 11:59 pm

Mr. Taeko Minegishi

800-825-5343

Date Completed: 9/18/09

Environmental Health & Engineering, Inc.

Date Received: 9/4/09 PO#: 16512

117 Fourth Avenue

Needham, MA 02494

781-247-4305

Project#: 16512

Sales Rep: TL

Total \$: \$ 935.00

Logged By: MG

Fraction	Sample #	Analysis	Collected	Amount\$
50B	Method Blank	ATL Applications	NA	\$0.00
50C	Method Blank	ATL Applications	NA	\$0.00
51A	CCV	ATL Applications	NA	\$0.00
Misc. Char	ges eCVP (17) @ \$5.00 each.			\$85.00

Note:

Samples received after 3 P.M. PST are considered to be received on the following work day.

Atlas Project Name/Profile#: CPSC Indoor Air Monitoring/13297

BILL TO:

Accounts Payable

Environmental Health & Engineering, Inc.

117 Fourth Avenue Needham, MA 02494 Analysis Code: Other GC

TERMS:

Reporting Method: ATL Application #62 Ozone-Radiello 172

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

## Other Records



## Method: ATL Application #62 Ozone-Radiello 172

CAS Number	Compound	Rpt. Limit (ug)
10028-15-6	Ozone	1.0

@Air Toxics Ltd.

<b>A</b> ₁	A <sub>2</sub> R	T	N E	1 Q	Analysis/Reporting vs. Project Profile/SOP requirements checked (i.e. 100% Dups, J-Flag to MDL, etc) The final report has the correct reporting list, special units, and header info.	
					Lab Narrative is correct (proper method & description/Receiving & Analytical notes correct) Sample Discrepancy Report (SDR) is completed	
			q		Corrective Action issued - #	
			150	- 0	Unusual circumstances have been documented in the notes section below	
	_			LU	IMEN validation report present and initialed CIRCLE (YES NO)	
			0		Lab Blank, CCV, LCS and DUP met QC criteria	
					Hold time is met for all samples	
	(D)		如贝		Appropriate data qualifier flags are applied	
	ф			_ 🗆	Manual integrations for samples and QC are properly documented	
					Samples analyzed within the project or method specific clock	
	10				Retention times have been verified	
	0 0				Appropriate ICAL(s) included	
	Q		1	0	At least one result per sample is verified against the target quant sheets/raw data	
				, 0	Dilution factor correctly calculated (sample load volume, syringe and bag dilutions, can pressurization(s))	
	الأماد   [2]				Correct amount of sample analyzed (i.e. sample not over-diluted)  Spectra verified - documentation of spectral defense included (Section 5A of eCVP pkg)	
***************************************	THE RESERVE OF THE PERSON NAMED IN COLUMN 1				TICs resemble reference spectra	
	ф ф				TICs between duplicate samples are consistent	
-	0 2		4	- 0	Checked samples for trends (i.e. Influent vs. Effluent, Field Dups, Field/Trip Blank, etc.)	
	□ ~ <b>Þ</b>		_		Data for multiple analyses of sample(s) has been evaluated for comparability of results	
	<u>d</u>		P		Special units for all samples in the final report are correctly calculated	
					Manually entered results checked (i.e. TPH/NMOC)	
	0 8				Chain of Custody verified for any special comments (i.e. different compounds/RLs, action levels)	
	<u> </u>				Chain of Custody vermed for any special comments (i.e. different compounds/RDs, action levels)  Chain of Custody scanned correctly	
					Verify sample id's vs. chain of custody	
	NO			ш	Date MDL(s) performed per instrument(s)	
	o ф				Samples pressurized w/ appropriate gas (N <sub>2</sub> or He)  Other (i.e. Tedlar bag, cartridge) sorben	-
					Final pressure consistent with canister size (6L vs. 1L)	)
					Verify receipt pressures	
			-	7	Verify canister ID #'s  Final invoice amount connect (adjusted for TAT, Benefities, Be issue Changes etc.)	
	Δ.		200		Final invoice amount correct (adjusted for TAT, Penalties, Re-issue Charges etc.)	
	ė.		Æ	L _	MDL date(s) present for all instruments utilized	
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Note (1): Please check all the appropriate boxes. Indicate "NA" for any statement that does not apply. Rev. 02/20/09 Note (2): Management reviewer and reporting reviewer must be separate individuals.